

* HYD is a hypothetical model based on backtested results. See p. 86 for full explanation.

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## Don't Leave Your Savings to Chance

Economics is a social science. Unlike researchers in the natural sciences, economists generally do not have the luxury of conducting controlled experiments. Instead research is based on data observed in actual markets as it is generated. Among the challenges this poses is the ability to distinguish meaningful outcomes from those that occur simply due to chance. This is a vexing problem in particular for investors who are inundated by money managers claiming to have the skills necessary to beat the market.

The "infinite monkey theorem" is often cited as an extreme example to make the point. If enough monkeys were to type randomly on typewriters for an adequate amount of time, one would eventually type the Old Testament in its entirety, strictly by chance. But having identified the monkey that accomplished this, it would hardly be prudent to bet that the same monkey would then go on to reproduce the New Testament!

There are thousands of mutual funds, hedge funds, pension funds, brokers and others employing their skills every day in the hope of providing above-average returns. Many successfully exceed the returns of the overall stock market, even for extended periods of time. But it would be folly to conclude without further analysis that any of these outcomes were a result of skill.

In this article we describe how statistical reasoning can help cast a light on the performance of money managers in a world of chance outcomes, and also to help investors follow
(continued next page)


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an alternative approach to portfolio management based on a rational assessment of risk and return rather than chasing performance.

## Risk versus Skill

Even before addressing the question of chance, it is important to measure a money manager's returns in light of the risk he is assuming. In our view certain asset classes, notably small cap and value stocks, provide expected returns greater than those of the overall stock market. They also carry greater risk.

The Fama-French three-factor regression model ${ }^{1}$ can be used to dissect the actual performance of an actively managed investment portfolio, assuming a performance history of adequate length is available. In particular, this model allows us to measure the extent to which a U.S. equity mutual fund has provided exposure to three sources of risk for which equity investors can expect to be compensated: overall market risk, size (small cap versus large cap stocks) and value (high book-to-market stocks versus low book-to-market stocks). Very often this exercise reveals that a manager who appears to have outperformed the overall market through skill has in fact only earned higher returns by subjecting investors to the greater risk inherent in small cap and / or value stocks. Unfortunately many funds will simply advertise very high historical returns, without acknowledging this risk exposure (beyond the mandated general risk disclaimers) while charging a very high fee for their supposed talent.

This three-factor model is therefore a useful first step in assessing alleged investment skill because it eliminates from consideration those managers who have generated above-market returns only by exposing investors to greater risk. However, there are funds that indicate skill may be evident, even after accounting for the risk a manager is assuming. This is indicated when we observe that a fund has provided positive alpha ( $\alpha$ ), a statistical measure of outperformance relative to a benchmark such as the overall market or the three-factor model. However, while positive alpha could suggest evidence of skill, it is far from conclusive. The prudent investor will fur-
ther investigate whether this alpha might have been generated simply as a result of chance.

## Alpha and Chance

The concept of statistical significance is essential to distinguish skill from chance. Historical data is all we have to estimate our expectations of the future. Though past data provides an actual outcome, it is in fact only one of many possible outcomes that might have been generated by capital markets. Therefore, we can never know a fund's "true" alpha. Having identified a fund with positive alpha over a particular period an investor should therefore ask whether he can be confident that the fund's true alpha is significantly different from zero. Specifically, he should consider the t-statistic (t-stat) that is applicable to the alpha generated by the fund (see accompanying box for more detail regarding the t-stat).

An investor can be 95 percent confident that a fund's true alpha is not in fact zero (with zero indicating no skill

## There is no reason to pay an active

 manager for his alleged skill if he is actually just buying stocks that bear greater risk. Investors who are willing to accept this risk-return trade-off can do so far more accurately, and cost effectively, if they instead adopt a deliberate strategy that targets these sources of risk and expected return through the index-type funds we recommend.at all) if the fund's historical alpha has an associated t-stat greater than two. For example, the Fidelity Select Retail fund had the highest alpha among actively managed U.S. equity mutual funds when ranked by their alpha over the three years ending September 2011. ${ }^{2}$ The fund boasted an impressive alpha of 15.44 percent. However, in order to evaluate whether this might simply be an outcome due to chance, we need to take a closer look at the statistical significance of this result by considering its $t$-stat.

We examined the fund over a longer time period (ten years) and accounted for any additional returns that we would expect it to earn considering its exposure to small cap and value stocks. After these
adjustments the fund's monthly alpha was still positive but highly variable so the $t$-stat for the alpha was only 1.21 . This is well below the $t$-stat of 2 that would give us comfort, at a 95 percent level of confidence, that this was not simply a chance outcome.

How many years of data would be required to meet this threshold of confidence? Since we can observe the fund's alpha and the variability of its alpha (measured by standard deviation) we can make this determination. It turns out that 44 years of data are required in order to be 95 percent certain that this fund's apparently stellar performance was not in fact simply a result of chance. This is especially sobering considering the current manager of this fund has been calling the shots for only 20 months!

Table 1 depicts the track record required to assess statistical significance, assuming a variety of hypothetical levels of alpha and associated volatility. Note that the number of years required decreases as a manager's "excess return" (alpha) increases, and as the uncertainty of that return (volatility measured by standard deviation) decreases.
A mutual fund that outperformed its benchmark by an average of two percent per year net of fees would probably be attractive to most investors. ${ }^{3}$ Suppose you located such a fund, and further assume the standard deviation of the alpha for the fund was equal to 6 percent (the standard deviation of the median fund among all U.S. equity funds with positive alpha, when ranked by their alpha, is 5.5 percent). An investor considering this fund would need 36 years of data to be 95 percent confident that its true alpha is not actually zero. But the average annual tenure of U.S. equity fund managers is only 5.6 years - so by the time an investor can be reasonably well assured he has identified a skilled manager, the manager may well be retired or have left the fund!

But even if we are 95 percent confident that we have identified a skilled manager, we cannot completely rule out the possibility that his outperformance was due to chance. For example, there are 4,491 funds in the entire U.S. equity mutual fund universe. This means that there are 112 mutual funds that can be expected to provide a historical positive alpha with a t-stat greater than two,

## The t-stat: Measuring Significance

The t -statistic, " t ", or " t -stat" is calculated as follows:
$\mathrm{t}=$ Average $/($ Standard Deviation $/ \sqrt{\mathrm{N}})$

Where:

Average = average alpha ( $\alpha$ ). $\alpha$ is a measure of outperformance (or "excess return") relative to a benchmark such as the overall market, or the Fama-French three-factor model.

Standard Deviation = Standard deviation of $\alpha$ (a large standard deviation indicates a highly variable $\alpha$ )
$\mathrm{N}=$ number of observations

The larger the resulting t-stat, the more confident we are that the fund's true alpha is not equal to zero. Note that the greater our average $\alpha$ is, and the greater the number of return observations we have $(\mathrm{N})$ the more confident we are that true $\alpha$ is not in fact zero. Conversely the more variable $\alpha$ is (standard deviation) the less certain we can be that $\alpha$ is not in fact zero.

Solving for N above yields:

$$
\mathrm{N}=\left(\mathrm{t} * \frac{\text { Standard Deviation }}{\text { Average }}\right)^{2}
$$

The values in Table 1 are generated from this equation by setting $t=2$ (to provide a $95 \%$ confidence interval) and allowing for various hypothetical levels of $\alpha$ and standard deviation. The more variable our observed alphas are, and the lower our average alpha is, the longer is the track record that will be required in order for an investor to confidently attribute any apparent outperformance to skill.
even if their true alpha is zero (i.e. even if they have no skill). But recent research suggests the challenge for skill-seekers is even greater; a 2010 study compared the returns of all the funds in the U.S. equity universe with those of a simulated universe of funds in which the true alpha of every fund was zero. The authors found fewer actual funds with statistically significant alphas than would be predicted by chance. ${ }^{4}$

## Desperately Seeking Methuselah

Even if you are comfortable investing money with a manager who has demonstrated statistically significant alpha, you still might be relying on a chance outcome, because you have drawn inferences from a data set limited to a particular time period. To be thorough, academics typically take another step by conducting out-of-sample tests in different time periods or in different markets in order to confirm a statistically significant result.

A common method of verifying investment performance is to use independent time periods. For example, having found a statistically significant outcome
in the U.S. between 1985 and 2011, a researcher might repeat the same experiment using data from a prior period, such as 1960 through 1984.

Let's return again to our example from Table 1. Suppose you have found a manager who has produced statistically significant, positive alpha of 2 percent per year with a standard deviation of 6 percent. How much time in total will be required if we want to test out of sample performance? If you are comfortable with the minimum of just one additional time period, you must multiply the number of years required in Table 1 by two. Therefore you would need 72 years of data to be comfortable you have not just stumbled across a lucky fund manager. We are now well past not only the manager's retirement, but probably his (or your) remaining life expectancy as well!

## Will it Continue?

Suppose you have identified a manager who has outperformed your benchmark handily and you have determined he has not done so simply by assuming greater risk (which you could have done on your own). Let's further assume that
he has also generated statistically significant, positive alpha and has repeated the trick in independent time periods. We will even allow that he is still living and running the same fund. Sounds like your hard work has paid off and you have found an investment genius, right?

Unfortunately, there still is no assurance you have picked a future winner. Persistence studies indicate that past winners do not continue to win even when there is positive alpha in the extremes, ${ }^{5}$ though there is some evidence that extreme underperformers tend to underperform in subsequent periods because of high fees and turnover. Big time losers might persist, big time winners do not.

Despite overwhelming evidence that winners rarely repeat, it is common practice for investment committees and individuals to select only managers whose overall performance is in the top half or top quartile of all performers, and to replace those managers when they lose that status. This is a losing strategy. These studies of persistence show that even when perennial losers are eliminated, the most recent top quartile performers have the same 25 percent chance of remaining in the top quartile as managers in the bottom 75 percent.

## No One Gives it Away

It is worth considering why there is scant evidence of skill. Economics teaches us that scarce resources capture any rents. ${ }^{6}$ In the case of investment talent, we can expect that the money manager's skill will capture the rent.

Suppose you have found a manager who has outperformed the market by 3 percent each and every year for the past 25 years. This means that the volatility of the fund's excess return is zero. This would constitute overwhelming evidence of managerial skill. But it also means that as soon as his ability became apparent the manager could increase his fee by just-under 3 percent as his fund gained attention, so his alpha, net of fees, would disappear. The value of his skill would not accrue to investors, but to himself. Alternatively, if he kept his fee low, new investors would beat a path to his door and any alpha would be distributed over an ever-increasing number of investors. In either case, alpha would be driven to zero.

| Active Management or <br> "Follow the Leader" | Prudent Risk Management |
| :--- | :--- |
|  | 1. Identify asset classes: isolate sources of compensated <br> risk |
| 1. Hire managers who have outperformed in the past | 2. Assign portfolio (percent) weights to asset classes <br> based on your needs and risk tolerance |
| 2. Fire managers who underperform in the future | 3. Identify the most cost-effective, well-diversified invest- <br> ment vehicles for capturing asset class returns |
| 3. Repeat | 4. Rebalance as needed to maintain portfolio weights |

## The Takeaway

We would like to think that if we only work hard enough we can employ statistical reasoning to find, with certainty, managers who are skillful. But the fact is, even finding a manager who might be skilled requires decades of data, and even then you can never be absolutely certain that a manager's apparent talent was not in fact attributable to chance. Even if somehow you managed to identify skill in advance you probably could not benefit because any excess returns would be absorbed by fees or diluted as other investors were drawn in.

Eminent scholars in the field of finance have spent their careers sifting through historical data in search of evidence that anyone can consistently outperform the market on a risk-adjusted basis. They have turned up very little despite having access to the best data and
the latest research. We submit that an individual investor who pores over stock tables or screens commercial databases in hopes of finding the next investment genius stands little chance of success.

Fortunately such efforts are not necessary. Capital markets furnish all you need to meet your financial goals. The statistical tools we described are highly effective in measuring risk and expected return. These methods have revealed sources of compensated risk which can
be purchased in measured doses consistent with your circumstances and preferences. The Investment Guide is designed to help you build a portfolio designed for growth, while providing a level of stability that lets you sleep at night. For investors who seek professional guidance, we can also help to create and maintain portfolios through our advisory services. For more information contact us at 413-528-1216 or info@americaninvestment.com.

| Table 1: Minimum Track Record (years required) for a Statistically Significant Alpha ( $\alpha$ ) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Average Alpha (Hypothetical) |  |  |  |
|  |  | 1\% | 2\% | 3\% | 4\% |
| Standard Deviation of Alpha <br> (Hypothetical) | 4\% | 64 | 16 | 7 | 4 |
|  | 6\% | 144 | 36 | 16 | 9 |
|  | 8\% | 256 | 64 | 28 | 16 |

1 For an overview of this model see "HYD and Multifactor Investing" Investment Guide, August 31, 2006, p. 60.
2 Three year alpha, as reported by Morningstar, Inc. for actively managed U.S. equity mutual funds (U.S. equity funds with at least $90 \%$ of assets invested in U.S. equities, excluding index funds and funds with less than10 year history).
3 Consider that over 20 years $\$ 10,000$ invested at an average annual total return of $8 \%$ per year would grow to $\$ 46,609$. The same amount invested at $10 \%$ would grow to $\$ 67,275$.
4 Eugene F. Fama and Kenneth R. French, "Luck Versus Skill in the Cross Section of Mutual Fund Returns," Journal of Finance 65, no. 5 (October 2010): 1965-1947.
5 For more on persistence see: "Skill, Chance and Active Management" Investment Guide, February 28, 2010, p.11., Mark Carhardt "On Persistence in Mutual Fund Performance" Journal of Finance 52, no. 1 (March 1997)., Fama and French, "Luck Versus Skill in the Cross Section of Mutual Fund Returns."
6 Economic rent can be thought of as payment for goods or beyond that amount needed to bring the required factors of production (in this case capital) into production.

## GOLD AND DEFLATION: WHAT INVESTORS NEED TO KNOW

The recent drop in the gold price serves as a reminder that gold is an extremely volatile asset class. However, gold is very useful when held in reasonable proportion alongside several other asset classes within a portfolio that is rebalanced periodically. We
have demonstrated repeatedly that this steady, time-tested approach should be maintained regardless of economic recession or expansion, or the prevailing level of price inflation.

In this article, which is adapted from recent research' published by our parent, AIER, we examine the implications for
investors who hold gold during periods of price deflation.

If gold were valuable to investors during only inflationary periods, then investors would be left with a choice between abandoning gold altogether and trying to time the market to avoid noninflationary periods. All of the
best available research argues that market timing is an exercise in futility. Fortunately, our research presented here indicates that trying to anticipate inflationary and deflationary cycles to make gold purchases and sales is unnecessary. Gold performs well in both environments.

Currently, we are at an unusual juncture in the U.S. economic outlook in which this is useful information. Some economists, looking at the record growth in bank reserves, are predicting much higher rates of inflation in the years to come. Others point to the European crisis and likely recession, the Chinese slowdown, and sluggish growth and deficit issues domestically as the reason they believe we are headed for another recession and a serious bout of deflation.

Measurements of price level changes - inflation and deflationhave gone through dramatic changes over the decades and centuries. In colonial times, little consumer expenditure was for services, and much of it was for raw materials to make things at home. In addition, in the past, simple or geometric averages were all that was possible.

Today, indexes are heavily weighted toward service prices, and people mostly buy manufactured goods. Index construction methodologies are very sophisticated because we know how to weight price components to form more representative estimates of price impact on economic activity.

This study looks at the American experience from 1790 to the present. The price measurement data is the wholesale Price Index. This index is one of the oldest time series compiled by the U.S. government constructed on a consistent basis. It was created to satisfy an 1891 U.S. Senate Resolution. The index was extended to the colonial period as part of a special compendium of data that was assembled by the U.S. Department of Commerce in honor of the U.S. Bicentennial in 1976. It was re-named the Producer Price Index (PPI) in 1978.

The PPI measures intermediate or wholesale goods prices. The prices of these goods are more volatile than consumer prices. They also do not exhibit the same long-term rising trend as consumer prices because of the increasing importance of services.

## Chart 1: Gold Prices vs. Wholesale Prices in the U.S., 1790-1970



Chart 2: Gold Prices vs. Wholesale Prices in the U.S., 1970-2011


Chart 3: Gold Prices vs. Oil Prices in the U.S.


Loosely speaking, deflation is a period of declining prices and is different from disinflation, which is a period of falling inflation rates. But there is no arbiter of the minimum magnitude and duration necessary to declare that deflation has occurred.

This study defines deflationary episodes by looking at periods during which producer prices declined by one standard deviation or more for one year
or more. In the U.S., a decrease in prices at the producer level, which exceeds one standard deviation, is a decrease in prices of more than 7 percent.

According to this definition, there were only 12 deflationary events in the U.S. during the 221 years examined. Eight of these occurred in the 19th century. There was one in the late 18th century, only two in the 20th century, and one so far this century.

[^0]The data reveal a dramatic shift, starting around 1949, in inflation/ deflation trends and patterns. From 1790-1949, the annual inflation rate averaged barely 1 percent, yet there was high volatility of nearly 10 percent around that trend. From 1950 to present, the inflation rate has more than tripled, averaging 3.4 percent annually, but with half as much volatility at 4.6 percent.

The shift to higher inflation with less volatility suggests a revision in the identification of deflation events. Instead of a -7 percent hurdle, it suggests that a -9 percent hurdle be used prior to 1949, and a -1.2 percent hurdle be used in more recent times.

This leads to the addition of three more deflation events, all in the post World War II era. All 15 deflationary events are shown in Charts 1 and 2. Chart 1 shows the history of gold prices and producer prices in the U.S. from 1790 to 1970 . This takes us from the early days of the nation until the closing of the gold window in the Nixon administration, which led to the end of the post-WWII gold exchange standard. Chart 2 takes us from that time forward. The light green shading shows deflationary periods. On average, across the 15 deflationary events, the
purchasing power of gold increased by 31 percent. The average deflation lasted about five years. This implies a simple annual average gain in purchasing power of about 6 percent from holding gold during deflations.

Gold did not appreciate in value during these periods. In some cases, it even declined. But with the exception of 1996-98, cumulative deflation was greater than the decrease in the price of gold.

The unusual events of 1996-98 warrant more careful analysis. Gold's purchasing power plunged by 24 percent, using annual data, while producer prices declined by 2.6 percent.

If we look at monthly data for this episode, the exact period of deflation was from January 1997 to February 1999. During this period, producer prices declined by 5.7 percent and gold prices declined by 19.1 percent. Consumer prices, on the other hand, rose by 3.3 percent. Much of the difference was because of the collapse in oil prices. During this period, crude oil prices fell by 52 percent from $\$ 25.17$ to $\$ 12.01$ per barrel.

As Chart 3 shows, since the 1973-74 recession, there has been a measurable increase in the correlation between oil
and gold prices. Both have risen. If the fortunes of oil producers are somehow related to major moves in gold prices, then the large decline in gold prices during 1996-98 may be more related to the collapse in oil prices than to the extent of deflation.

AIER found similar results in the U.K., where relevant data extends over 400 years. There the gold price also held up well during periods of deflation. This provides robust out-of-sample support for the same findings in the American economy.

The empirical evidence is clear. Gold is a store of value even during deflations. The purchasing power of gold rises because it does not go down in value to the same extent the price level declines. If you are concerned that deflation is ahead, there is no reason to exclude gold from your portfolio. Investors should continue to devote between five and ten percent of their holdings to gold related assets regardless of the purchasing power environment that might prevail.

## THE HIGH-YIELD DOW INVESTMENT STRATEGY

| Recommended HYD Portfolio |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| As of December 15, 2011 |  |  |  |  |  |  |
|  |  |  |  |  |  | Rank |

${ }^{* *}$ Currently indicated purchases approximately equal to indicated purchases 18 months ago. ${ }^{1}$ Because the percentage of each issue in the portfolio by value reflects the prices shown in the table, we are also showing the number of shares of each stock as a percentage of the total number of shares in the entire portfolio.
Subscribers can find a full description of the strategy and methodology in the "Subscribers Only" (Log in required) section of our website: www.americaninvestment.com.

The total returns presented in the table below represent changes in the value of a hypothetical HYD portfolio with a beginning date of January 1979 (the longest period for which data was available for the HYD model and relevant indexes) through November 30, 2011*.

|  | 1 mo . | 1 yr . | 5 yrs . | 10 yrs . | 20 yrs . | Since 1/79 | Std. Dev. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HYD Strategy | 4.86 | 19.45 | 1.86 | 6.65 | 12.67 | 15.78 | 18.00 |
| Russell 1000 Value Index | -0.52 | 6.17 | -2.59 | 3.93 | 9.24 | 11.77 | 15.09 |
| Dow | 1.18 | 12.39 | 2.48 | 4.59 | 9.91 | NA | NA |

*Data assume all purchases and sales at mid-month prices (+/-\$0.125 per share commissions), reinvestment of all dividends and interest, and no taxes. The 5-, 10- and 20-year total returns are annualized, as is the standard deviation of those returns since January 1979, where available. Model HYD calculations are based on hypothetical trades following a very exacting stock-selection strategy, and are gross of any management fees. They do not reflect returns on actual investments or previous recommendations of AIS. Past performance may differ from future results. Historical performance results for investment indexes and/or categories generally do not reflect the deduction of transaction and/or custodial charges or the deduction of an investment-management fee, the incurrence of which would have the effect of decreasing historical performance results.

RECENT MARKET STATISTICS

| Precious Metals \& Commodity |  |  |  |
| :--- | ---: | ---: | ---: |
|  | Prices (\$) |  |  |
|  | $\mathbf{1 2 1 5 1 5 / 1 1}$ | Mo. Earlier | Yr. Earlier |
| Gold, London p.m. fixing | $\mathbf{1 5 7 4 . 0 0}$ | 1785.00 | 1388.75 |
| Silver, London Spot Price | $\mathbf{2 8 . 8 0}$ | 34.02 | 29.06 |
| Copper, COMEX Spot Price | $\mathbf{3 . 2 6}$ | 3.50 | 4.13 |
| Crude Oil, W. Texas Int. Spot | $\mathbf{9 3 . 2 1}$ | 99.36 | 88.61 |
| Dow Jones Spot Index | $\mathbf{4 0 9 . 6 9}$ | 446.05 | 438.30 |
| Dow Jones-UBS Commodity Index | $\mathbf{1 3 6 . 2 6}$ | 148.94 | 154.61 |
| Reuters-Jefferies CRB Index | $\mathbf{2 9 4 . 4 5}$ | 320.87 | 318.84 |


| Securities Markets |  |  |  |
| :--- | ---: | ---: | ---: |
|  | $\mathbf{1 2 / 1 5 1 1 1}$ | Mo. Earlier | Yr. Earlier |
| S \& P 500 Stock Composite | $\mathbf{1 , 2 1 5 . 7 5}$ | $1,257.81$ | $1,235.23$ |
| Dow Jones Industrial Average | $\mathbf{1 1 , 8 6 8 . 8 1}$ | $12,096.16$ | $11,457.47$ |
| Dow Jones Bond Average | $\mathbf{2 8 8 . 4 7}$ | 268.05 | 262.37 |
| Nasdaq Composite | $\mathbf{2 , 5 4 1 . 0 1}$ | $2,686.20$ | $2,617.22$ |
| Fanancial Times Gold Mines Index | $\mathbf{3 , 3 6 7 . 1 5}$ | $3,933.17$ | $3,940.24$ |
| FT EMEA (African) Gold Mines | $\mathbf{3 , 1 8 7 . 5 3}$ | $3,638.05$ | $3,648.00$ |
| FT Asia Pacific Gold Mines | $\mathbf{1 4 , 4 3 2 . 6 1}$ | $17,058.38$ | $18,737.36$ |
| FT Americas Gold Mines | $\mathbf{2 , 8 7 0 . 4 4}$ | $3,367.10$ | $3,315.89$ |


| U.S. Treasury bills - | 91 day | 0.00 | 0.01 | 0.14 |
| :---: | :---: | :---: | :---: | :---: |
|  | 182 day | 0.05 | 0.05 | 0.20 |
|  | 52 week | 0.12 | 0.11 | 0.30 |
| U.S. Treasury bonds - | 10 year | 1.92 | 2.06 | 3.53 |
| Corporates: |  |  |  |  |
| High Quality - | 10+ year | 3.90 | 3.93 | 5.17 |
| Medium Quality - | 10+ year | 5.19 | 5.20 | 6.27 |
| Federal Reserve Discount Rate |  | 0.75 | 0.75 | 0.75 |
| New York Prime Rate |  | 3.25 | 3.25 | 3.25 |
| Euro Rates | 3 month | 1.42 | 1.58 | 1.03 |
| Government bonds | 10 year | 1.97 | 1.73 | 2.97 |
| Swiss Rates - | 3 month | 0.05 | 0.04 | 0.17 |
| Government bonds | 10 year | 0.73 | 0.84 | 1.83 |

## Exchange Rates (\$)

British Pound
Canadian Dollar
Euro
Japanese Yen
South African Rand
Swiss Franc

| $\mathbf{1 . 5 4 8 6 0 0}$ | 1.581800 | 1.561300 |
| :--- | :--- | :--- | :--- |
| $\mathbf{0 . 9 6 7 3 0 5}$ | 0.977230 | 0.996711 |
| $\mathbf{1 . 3 0 1 3 0 0}$ | 1.352400 | 1.330600 |
| $\mathbf{0 . 0 1 2 8 4 2}$ | 0.012989 | 0.011899 |
| $\mathbf{0 . 1 1 9 3 3 0}$ | 0.121950 | 0.146499 |
| $\mathbf{1 . 0 6 3 6 0 3}$ | 1.089680 | 1.039609 |


|  | $\mathbf{1 2 / 1 5 / 1 1}$ | Mo. Earlier | Yr. Earlier | Prem (\%) |
| :--- | ---: | :---: | :---: | :---: |
| American Eagle (1.00) | $\mathbf{1 , 7 1 3 . 5 0}$ | $1,835.40$ | $1,442.68$ | 8.86 |
| Austrian 100-Corona (0.9803) | $\mathbf{1 , 6 1 1 . 0 3}$ | $1,729.13$ | $1,356.63$ | 4.41 |
| British Sovereign (0.2354) | $\mathbf{4 0 3 . 4 0}$ | 432.20 | 341.30 | 8.87 |
| Canadian Maple Leaf (1.00) | $\mathbf{1 , 6 8 9 . 1 0}$ | $1,811.20$ | $1,426.20$ | 7.31 |
| Mexican 50-Peso (1.2057) | $\mathbf{1 , 9 8 5 . 1 0}$ | $2,130.50$ | $1,671.45$ | 4.60 |
| Mexican Ounce (1.00) | $\mathbf{1 , 6 6 7 . 0 0}$ | $1,787.60$ | $1,406.90$ | 5.91 |
| S. African Krugerrand (1.00) | $\mathbf{1 , 6 8 7 . 3 8}$ | $1,809.18$ | $1,424.78$ | 7.20 |
| U.S. Double Eagle-\$20 (0.9675) |  |  |  |  |
| St. Gaudens (MS-60) | $\mathbf{1 , 7 4 0 . 0 0}$ | $1,802.50$ | $1,520.00$ | 14.26 |
| Liberty (Type I-AU50) | $\mathbf{1 , 9 7 5 . 0 0}$ | $1,975.00$ | $1,625.00$ | 29.69 |
| Liberty (Type II-AU50) | $\mathbf{1 , 8 6 7 . 5 0}$ | $1,855.00$ | $1,560.00$ | 22.63 |
| Liberty (Type III-AU50) | $\mathbf{1 , 7 2 5 . 0 0}$ | $1,792.50$ | $1,480.00$ | 13.27 |
| U.S. Silver Coins (\$1,000 face value,circulated) |  |  |  |  |
| 90\% Silver Circ. (715 oz.) | $\mathbf{2 1 , 8 3 7 . 5 0}$ | $24,025.00$ | $20,750.00$ | 6.05 |
| 40\% Silver Circ. (292 oz.) | $\mathbf{8 , 9 0 0 . 0 0}$ | $9,775.00$ | $8,550.00$ | 5.83 |
| Silver Dollars Circ. | $\mathbf{2 4 , 3 2 5 . 0 0}$ | $26,500.00$ | $22,700.00$ | 9.18 |

Note: Premium reflects percentage difference between coin price and value of metal in a coin, with gold at $\$ 1574$ per ounce and silver at $\$ 28.80$ per ounce. The weight in troy ounces of the precious metal in coins is indicated in parentheses.

## THE DOW JONES INDUSTRIALS RANKED BY YIELD*

|  | Ticker <br> Symbol | Market Prices (\$) |  |  | 12-Month (\$) |  | Latest Dividend Record |  |  | Indicated |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 12/15/11 | 11/15/11 | 12/15/10 | High | Low | Amount (\$) | Date | Paid | Dividend | \$) (\%) |
| AT\&T | T | 28.79 | 29.25 | 29.13 | 31.94 | 27.20 | 0.430 | 10/10/11 | 11/1/11 | 1.720 | 5.97 |
| Verizon | VZ | 38.42 | 37.24 | 34.63 | 38.95 | 32.28 | 0.500 | 1/10/12 | 2/1/12 | 2.000 | 5.21 |
| Merck | MRK | 36.36 | 35.73 | 36.66 | 37.65 | 29.47 | 0.420 | 12/15/11 | 1/9/12 | 1.680 | 4.62 |
| Pfizer | PFE | 21.14 | 19.87 | 17.08 | 21.45 | 16.63 | 0.220 | 2/03/12 | 3/6/12 | 0.880 | 4.16 |
| General Electric | GE | 16.79 | 16.20 | 17.49 | 21.65 | 14.02 | 0.170 | 12/27/11 | 1/25/12 | 0.680 | 4.05 |
| Dupont | DD | 43.70 | 48.30 | 49.24 | 57.00 | 37.10 | 0.410 | 11/15/11 | 12/14/11 | 1.640 | 3.75 |
| Intel Corp | INTC | 23.31 | 25.34 | 21.28 | 25.78 H | 19.16 | 0.210 | 11/07/11 | 12/1/11 | 0.840 | 3.60 |
| Johnson \& Johnson | JNJ | 64.00 | 64.99 | 62.57 | 68.05 | 57.50 | 0.570 | 11/29/11 | 12/13/11 | 2.280 | 3.56 |
| Chevron | CVX | 99.67 | 103.27 | 88.01 | 110.01 | 86.68 | 0.810 | 11/18/11 | 12/12/11 | 3.240 | 3.25 |
| Procter and Gamble | PG | 64.99 | 63.56 | 63.64 | 67.72 | 57.56 | 0.525 | 10/21/11 | 11/15/11 | 2.100 | 3.23 |
| Kraft | KFT | 36.46 | 35.48 | 31.48 | 36.90 H | 30.21 | 0.290 | 12/30/11 | 1/13/12 | 1.160 | 3.18 |
| J P Morgan | JPM | 31.76 | 32.70 | 40.21 | 48.36 | 27.85 | 0.250 | 1/06/12 | 1/31/12 | 1.000 | 3.15 |
| Microsoft Corp. | MSFT | 25.56 | 26.74 | 27.85 | 29.46 | 23.65 | 0.200 | 2/16/12 | 3/8/12 | 0.800 | 3.13 |
| Home Depot, Inc. | HD | 39.42 | 38.07 | 34.79 | 40.93 H | 28.13 | 0.290 | 12/01/11 | 12/15/11 | 1.160 | 2.94 |
| Travelers | TRV | 56.81 | 57.29 | 55.15 | 64.17 | 45.97 | 0.410 | 12/09/11 | 12/30/11 | 1.640 | 2.89 |
| McDonald's | MCD | 98.14 | 94.47 | 76.98 | 98.95 H | 72.14 | 0.700 | 12/01/11 | 12/15/11 | 2.800 | 2.85 |
| Coca-Cola | KO | 66.89 | 68.00 | 64.74 | 71.77 | 61.29 | 0.470 | 12/01/11 | 12/15/11 | 1.880 | 2.81 |
| 3M Company | MMM | 78.86 | 81.87 | 85.81 | 98.19 | 68.63 | 0.550 | 11/25/11 | 12/12/11 | 2.200 | 2.79 |
| United Tech. | UTX | 73.53 | 79.33 | 78.95 | 91.83 | 66.87 | 0.480 | 11/18/11 | 12/10/11 | 1.920 | 2.61 |
| Wal-Mart Stores | WMT | 57.95 | 57.46 | 54.23 | 59.40 | 48.31 | 0.365 | 3/11/11 | 4/4/11 | 1.460 | 2.52 |
| Boeing | BA | 70.61 | 67.94 | 64.24 | 80.65 | 56.01 | 0.440 | 2/10/12 | 3/2/12 | 1.760 | 2.49 |
| Exxon Mobil | XOM | 80.03 | 79.09 | 71.85 | 88.23 | 67.03 | 0.470 | 11/10/11 | 12/9/11 | 1.880 | 2.35 |
| Caterpillar | CAT | 87.70 | 97.07 | 93.12 | 116.55 | 67.54 | 0.460 | 1/20/12 | 2/18/12 | 1.840 | 2.10 |
| Hewlett-Packard | HPQ | 26.16 | 28.24 | 41.23 | 49.39 | 21.50 | 0.120 | 12/14/11 | 1/4/12 | 0.480 | 1.83 |
| Walt Disney | DIS | 35.19 | 36.45 | 36.95 | 44.34 | 28.19 | 0.600 | 12/16/11 | 1/18/12 | 0.600 | 1.71 |
| IBM | IBM | 187.48 | 188.75 | 144.72 | 194.90 H | 144.15 | 0.750 | 11/10/11 | 12/10/11 | 3.000 | 1.60 |
| American Express | AXP | 46.42 | 49.95 | 46.12 | 53.80 | 41.25 | 0.180 | 1/06/12 | 2/10/12 | 0.720 | 1.55 |
| Alcoa | AA | 8.78 | 10.36 | 13.96 | 18.47 | 8.45 | 0.030 | 11/04/11 | 11/25/11 | 0.120 | 1.37 |
| Cisco | CSCO | 18.04 | 19.12 | 19.47 | 22.34 | 13.30 | 0.060 | 1/05/12 | 1/25/12 | 0.240 | 1.33 |
| Bank of America | BAC | 5.26 | 6.13 | 12.29 | 15.31 | 5.03 L | 0.010 | 12/02/11 | 12/23/11 | 0.040 | 0.76 |

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[^0]:    1 van Kipnis, Gregory, MBA, Chairman of the Board, American Investment Services, Inc. Gold Also Glitters During Deflations Research Reports (AIER), Vol. LXXVIII, No. 21, December 5, 2011, p. 1

[^1]:    * See the Recommended HYD Portfolio table on page 86 for current recommendations. + Based on indicated dividends and market price as of 12/15/11.

    Extra dividends are not included in annual yields. H New 52-week high. L New 52-week low. (s) All data adjusted for splits and spin-offs. 12-month data begins 12/16/11.

